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UNITED STATES PATENT AND TRADEMARK OFFICE

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/054,246	01/23/2002	Kenneth J. Latimer JR.	102030-10-NP	3719

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EXAMINER
ALBERTALLI, BRIAN LOUIS

ART UNIT	PAPER NUMBER
2655	

DATE MAILED: 06/23/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

PTO-90C (Rev. 10/03)

	Application No.	**Applicant(s)**
Office Action Summary	10/054,246	LATIMER, KENNETH J.
	Examiner	**Art Unit**	
	Brian L Albertalli	2655	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE <u>3</u> MONTH(S) FROM
THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed
  after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
  Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any
  earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on <u>07 March 2005</u>.

2a)☒ This action is **FINAL**.   2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is
closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) <u>2,4,5 and 8-19</u> is/are pending in the application.

    4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) <u>2,4,5 and 8-19</u> is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

    Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

    a)☐ All b)☐ Some * c)☐ None of:

      1.☐ Certified copies of the priority documents have been received.

      2.☐ Certified copies of the priority documents have been received in Application No. _____.

      3.☐ Copies of the certified copies of the priority documents have been received in this National Stage
application from the International Bureau (PCT Rule 17.2(a)).

    * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1)☒ Notice of References Cited (PTO-892)

2)☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3)☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
    Paper No(s)/Mail Date _____.

4)☐ Interview Summary (PTO-413)
    Paper No(s)/Mail Date. _____.

5)☐ Notice of Informal Patent Application (PTO-152)

6)☐ Other: _____.

U.S. Patent and Trademark Office

PTOL-326 (Rev. 1-04)   **Office Action Summary**   Part of Paper No./Mail Date 06172005

DETAILED ACTION

Response to Amendment

1.   The amendments to the claims have been entered.   Claims 2, 4, and 5 are

currently amended, claims 1, 3, 6, and 7 are currently cancelled, and new claims 8-19

have been added.

Response to Arguments

2.   Regarding the use of Official Notice used in the rejection of claim 5 in the

previous Office Action, it is noted that the Applicant has not specifically challenged this

assertion, thus the well-known statement is taken to be admitted prior art. See MPEP

2144.03.

3.   Applicant's arguments with respect to claims 2, 4, and 5 have been considered

but are moot in view of the new ground(s) of rejection.

Specification

4.   The amendments to the specification overcome the objections made in the

previous Office Action. The objections to the specification are withdrawn.

Claim Objections

5.   The amendments to the claims overcome the objections made in the previous

Office Action. The objections to the claims are withdrawn.

Claim Rejections - 35 USC § 103

6.   The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all

obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

7.   Claims 2, 4, 8-13, and 17-19 are rejected under 35 U.S.C. 103(a) as being

unpatentable over Phillips et al. (U.S. Patent 6,243,377), in view of Downes

(*Internetworking Technologies Handbook*).

In regard to claim 2, Phillips et al. disclose a system (Fig. 4) capable of

transmitting voice and data signals over a wide-area network (WAN) circuit (subscriber

line DSL 100); said WAN circuit having a line rate (many rate accesses formats are

available, column 3, lines 34-39); said system comprising:

a physical layer interface (Fig. 1, subscriber equipment RU 10, illustrated in detail

in Fig. 4 has data interface 42) for connecting a subscriber premise device (computer

device 12) between a LAN and said WAN circuit for providing packets representing data

signals to said WAN circuit (data from the computer device 12 are received by the

multiplexer/demultiplexer circuit M/D 40 and transmitted on the WAN subscriber line

100, column 4, lines 2-8 and lines 13-15);

a telephone line interface for connecting a standard telephone line equipment to

said WAN circuit (subscriber line interface circuit 43 accepts analog input from

telephone device 13, column 4, lines 8-10); said telephone line interface containing a

CODEC that digitizes analog signals for transmission of voice packets to said WAN

circuit (column 4, lines 10-15);

a fragmenting device containing a software algorithm rendered effective by the

presence of packets from said telephone line interface for fragmenting data signals into

labeled packets interspersed with said voice packets as the data signals pass there

through; said labeled packets having a fragmented packet size determined by the line

rate (line rates are expressed by the number of B channels available, and generally are

expressed as xB+D, where x represents the number of B channels available, and thus,

the line rate, column 3, lines 27-37; an example is given with a 2B+D line rate, where,

before the phone is off the hook, a packet size of 2B is available for data, column 3,

lines 39-42; when the phone goes of the hook, or ring signal is received, one of the B

channels is dynamically allocated to the telephone, thus reducing the packet size

available for data to a single B channel, column 3, lines 42-48; furthermore, data from

the computer 12 is placed in the available B channel, which has a capacity of 64 kb/s,

but due to labeling, the data rate is lower, column 3, lines 39-51); and

a packet flow device configured to mix data packets and voice packets into a

stream provided to said WAN circuit (M/D 40 time division multiplexes the voice and

data signals into a stream for transmission over subscriber line 100, column 4, lines 2-4

and lines 10-15).

Phillips et al. do not disclose that the data from the user computer 12 is supplied

to the subscriber terminal RU 10 through an Ethernet type LAN connection.

Downes discloses Ethernet is the most common LAN technology in use (page 7-1, Background). Downes further disclose a data frame format required for an Ethernet implementation, and that the data portion of that frame is up to 1500 bytes in size (page 7-6, Data paragraph).

Therefore, it would have been obvious to one of ordinary skill in the art at the time of invention to modify Phillips et al. so the user computer 12 communicated with the subscriber terminal RU 10 through a standard Ethernet connection because Ethernet technology provides an easily understandable, low-cost, flexible, and manufacturer independent means for communicating between devices, as taught by Downes (page 7-1). Furthermore, the Ethernet frames would necessarily have to be fragmented, since the data capacity of the WAN could be as low as 64 kb/s.

In regard to claim 4, Phillips et al. disclose the size of the fragmented packet is chosen to ensure that the packets from said telephone line can have an arrival rate of 64 Kbps regardless of the network line speed or Ethernet traffic (when the telephone is off hook, a B channel at 64 Kbps is dynamically allocated for voice packets, column 3, lines 42-46).

In regard to claim 8, Phillips et al. disclose a system (Fig. 4) for multiplexing Ethernet packets and voice signals over a wide-area network (WAN) circuit (subscriber line DSL 100) connecting a subscriber premise and a provider premise, the WAN circuit

having a line rate (many rate accesses formats are available, column 3, lines 34-39),

the system comprising:

an Ethernet interface configured to communicate data packets to and from a LAN

(data interface 42, column 4, lines 2-8);

a telephone line interface coupled to telephone equipment and configured to

produce voice packets (subscriber line interface circuit 43, column 4, lines 8-13);

a fragmentation device configured to receive packets from the LAN interface and,

responsive to the presence of voice packets at the telephone line interface, to fragment

LAN packets into labeled data packets, wherein the size of the labeled packets is based

on the WAN line rate (line rates are expressed by the number of B channels available,

and generally are expressed as xB+D, where x represents the number of B channels

available, and thus, the line rate, column 3, lines 27-37; an example is given with a

2B+D line rate, where, before the phone is off the hook, a packet size of 2B is available

for data, column 3, lines 39-42; when the phone goes of the hook, or ring signal is

received, one of the B channels is dynamically allocated to the telephone, thus reducing

the packet size available for data to a single B channel, column 3, lines 42-48;

furthermore, data from the computer 12 is placed in the available B channel, which has

a capacity of 64 kb/s, but due to labeling, the data rate is lower, column 3, lines 39-51);

a multiplexer configured to multiplex the labeled data packets with the voice

packets into a stream (M/D 40 time division multiplexes the voice and data signals,

column 4, lines 2-4 and lines 10-13); and

a WAN interface configured to communicate the multiplexed stream of voice

packets and labeled data packets over the WAN circuit (the stream is transmitted over

subscriber line 100, column 4, lines 13-15).

Phillips et al. do not disclose that the data from the user computer 12 is supplied

to the subscriber terminal RU 10 through an Ethernet type LAN connection.

Downes discloses Ethernet is the most common LAN technology in use (page 7-

1, Background). Downes further disclose a data frame format required for an Ethernet

implementation, and that the data portion of that frame is up to 1500 bytes in size (page

7-6, Data paragraph).

Therefore, it would have been obvious to one of ordinary skill in the art at the

time of invention to modify Phillips et al. so the user computer 12 communicated with

the subscriber terminal RU 10 through a standard Ethernet connection because

Ethernet technology provides an easily understandable, low-cost, flexible, and

manufacturer independent means for communicating between devices, as taught by

Downes (page 7-1). Furthermore, the Ethernet frames would necessarily have to be

fragmented, since the data capacity of the WAN could be as low as 64 kb/s.

In regard to claim 9, Phillips et al. disclose the multiplexer is further configured to

multiplex the labeled data packets with the voice packets into a stream according to a

priority scheme whereby one voice packet alternates with one labeled data packet (see

Fig. 2, one of the B channels is dynamically allocated to voice signal, for example B1,

leaving the next channel, B2, available for data, column 3, lines 42-48).

In regard to claim 10, Phillips et al. disclose the size is further based on a sampling rate at which the voice packets are produced (one full B channel is allocated for the voice signal, thereby reducing the available capacity for data by 64 Kbps, column 3, lines 42-48).

In regard to claim 11, Phillips et al. disclose the data packets are variable in size (combined data channels vary in size according to whether the telephone is in use, column 3, lines 37-46).

In regard to claim 12, Phillips et al. disclose the voice packets are fixed in size (one B channel is assigned to the voice data, column 3, lines 42-46).

In regard to claim 13, Phillips et al. disclose a method for multiplexing data and voice signals over a wide-area network circuit connecting a subscriber premise and a provider premise, the method comprising:

receiving data (column 4, lines 2-4);

receiving voice packets (column 4, lines 8-10);

responsive to the presence of voice packets, fragmenting the data into a plurality of data packets having a size calculated to ensure that the transmission time of the data packet over the WAN circuit is no longer than the transmission time of a voice packet (line rates are expressed by the number of B channels available, and generally are

expressed as xB+D, where x represents the number of B channels available, and thus,

the line rate, column 3, lines 27-37; an example is given with a 2B+D line rate, where,

before the phone is off the hook, a packet size of 2B is available for data, column 3,

lines 39-42; when the phone goes of the hook, or ring signal is received, one of the B

channels is dynamically allocated to the telephone, thus reducing the packet size

available for data to a single B channel, column 3, lines 42-48);

labeling each of the data packets with an identifier indicating where the

fragmented data packets fit within the original data (data from the computer 12 is placed

in the available B channel, which has a capacity of 64 kb/s, but due to labeling, the data

rate is lower, the labeling necessarily indicates how the data should be reconstructed to

recreated the original data signal, column 3, lines 39-51);

multiplexing the labeled data packets and the voice packets over the WAN circuit

(M/D 40 time division multiplexes the voice and data signals into a stream for

transmission over subscriber line 100, column 4, lines 2-4 and lines 10-15).

Phillips et al. do not disclose that the data from the user computer 12 is supplied

to the subscriber terminal RU 10 through an Ethernet type LAN connection.

Downes discloses Ethernet is the most common LAN technology in use (page 7-

1, Background). Downes further disclose a data frame format required for an Ethernet

implementation, and that the data portion of that frame is up to 1500 bytes in size (page

7-6, Data paragraph).

Therefore, it would have been obvious to one of ordinary skill in the art at the

time of invention to modify Phillips et al. so the user computer 12 communicated with

the subscriber terminal RU 10 through a standard Ethernet connection because

Ethernet technology provides an easily understandable, low-cost, flexible, and

manufacturer independent means for communicating between devices, as taught by

Downes (page 7-1). Furthermore, the Ethernet frames would necessarily have to be

fragmented, since the data capacity of the WAN could be as low as 64 kb/s.

In regard to claim 17, Phillips et al. disclose the size is based on the WAN line

rate (line rates are expressed by the number of B channels available, and generally are

expressed as xB+D, where x represents the number of B channels available, and thus,

the line rate, column 3, lines 27-37; an example is given with a 2B+D line rate, where,

before the phone is off the hook, a packet size of 2B is available for data, column 3,

lines 39-42; when the phone goes of the hook, or ring signal is received, one of the B

channels is dynamically allocated to the telephone, thus reducing the packet size

available for data to a single B channel, column 3, lines 42-48).

In regard to claim 18, Phillips et al. disclose the size is based on a sampling rate

at which the voice packets are produced (one full B channel is allocated for the voice

signal, thereby reducing the available capacity for data by 64 Kbps, column 3, lines 42-

48).

In regard to claim 19, Phillips et al. disclose multiplexing the labeled data packets

with the voice packets over the WAN circuit according to a priority scheme whereby one

voice packet alternates with one labeled data packet (see Fig. 2, one of the B channels is dynamically allocated to voice signal, for example B1, leaving the next channel, B2, available for data, column 3, lines 42-48).

8. Claim 5 rejected under 35 U.S.C. 103(a) as being unpatentable over Phillips et al., in view of Downes, as applied to claim 1 above, and further in view of the Applicant's admitted prior art.

Regarding the specific line rates and packet sizes given in claim 5, the Applicant's admitted prior art discloses calculating the amount of space left in a data stream for user data. Given high priority data that must be sent through the data stream at a constant rate, and a certain line rate, there is only so much "room" left for other low priority data. Accordingly, as the rate of the data stream increases, the amount of "room" for low priority data increases as well, which means the size of each low priority data packet increases as well.

Therefore, in view of the teachings of Phillips et al. and Downes and further in view the Applicant's admitted prior art, it would have been obvious to one of ordinary skill in the art at the time of invention to store any number of line rates and corresponding data packet sizes in a table, so that the system would be able to quickly respond to any changes in the line speed and adjust the data packet size accordingly.

9.   Claims 14-16 are rejected under 35 U.S.C. 103(a) as being unpatentable over

Phillips et al., in view of Downes, as applied to claim 13 above, and further in view of

Kimura et al. (U.S. Patent 5,778,189).

Neither Phillips et al. nor Downes disclose specific identifiers to indicate what

portions of an Ethernet frame are contained within a packet.

Kimura et al. disclose that when an Ethernet frame (Fig. 7, FR3) must be divided

for transmission, information for data sequence control must be added so that the full

Ethernet frame can be reconstructed after transmission (column 9, lines 13-19).

It would have been obvious to one of ordinary skill in the art at the time of

invention to further modify the combination of Phillips et al. and Downes to include

identifiers indicating whether the data packets contained an entire Ethernet frame, a first

portion of an Ethernet frame, or a last portion of an Ethernet frame, so the Ethernet

frames could be properly reconstructed after transmission over the WAN.

Conclusion

The prior art made of record and not relied upon is considered pertinent to

applicant's disclosure. Lee (*An Integrated Transport Technique for Circuit and Packet*

Switched Traffic) and Chao (*Design of Transmission and Multiplexing Systems for*

Broadband Packet Networks) disclose the use of dynamic time division multiplexing to

handle continuous and bursty network traffic effectively.

Applicant's amendment necessitated the new ground(s) of rejection presented in

this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP

§ 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37
CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE
MONTHS from the mailing date of this action. In the event a first reply is filed within
TWO MONTHS of the mailing date of this final action and the advisory action is not
mailed until after the end of the THREE-MONTH shortened statutory period, then the
shortened statutory period will expire on the date the advisory action is mailed, and any
extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of
the advisory action. In no event, however, will the statutory period for reply expire later
than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the
examiner should be directed to Brian L Albertalli whose telephone number is (571) 272-
7616. The examiner can normally be reached on Mon - Fri, 8:00 AM - 5:30 PM, every
second Fri off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's
supervisor, Wayne Young can be reached on (571) 272-7582. The fax phone number
for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the

Patent Application Information Retrieval (PAIR) system. Status information for

published applications may be obtained from either Private PAIR or Public PAIR.

Status information for unpublished applications is available through Private PAIR only.

For more information about the PAIR system, see http://pair-direct.uspto.gov. Should

you have questions on access to the Private PAIR system, contact the Electronic

Business Center (EBC) at 866-217-9197 (toll-free).

BLA 6/20/05

SUSAN MCFADDEN
PRIMARY EXAMINER